THESIS ON MIGRAINE

by

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INTRODUCTION.

"These are his megrims, firks, and melancholies." (Ford, 1629.)

The word "megrims" is used as meaning fancies, whims, freaks, humours, by Ford in his tragedy of the "Lover's Melancholy."

Megrims is also used by the members of the veterinary profession, to designate an equine disease, the nature of which they know little or nothing.

Migraine, Megrims, Megrim, sick-headache, bilious headache, hemicrania (ἡμι half κρανιον the head) are some of the names affording but little information as to its real nature, which have been inscribed on the altar to the unknown disease on which so many victims are immolated. Much has been written since the classical work of Dr. E. Liveing, which was published in the year 1873, who was the pioneer in the investigation of this malady; notably by Drs. W.F.H. Day, "Headaches, their nature, causes, and treatment," 1888; H. Campbell, "Headaches, and other morbid cephalic sensations," 1894; Charles K. Mills, Philadelphia, "Headache;" P.W. Latham in the Dictionary of Medicine," (Quain 1894); Sir William Gowers "Borderland of Epilepsy," 1907; Dr. W. Harris, "Migraine

and Toxaemic Headaches," 1906, also by numerous others, many of them members of our own profession, who are themselves sufferers, yet, little is really known of the precise pathology of this weird, elusive and mysterious disease, although (1) Dr. W.H. Harris says in the "Practitioner," page 29, July 1906, "a clear understanding of the pathology of Migraine is a necessary preliminary to its scientific treatment," "a consummation devoutly to be wished," but the fulfilment of which I fear will be long delayed.

Fairly common, as this disease is, it is not so general, I think, as some observers would lead us to suppose, certainly not in the Hospital class, though constantly on the look-out for it, I failed to detect a single case amongst some 15,000 Recruits I examined as Civil Surgeon at the Guard's Depot, Caterham, from 1899 to 1906, a period of seven years. These young men were enlisted from all parts of the United Kingdom, and of course, presumably free from disease, although many of them were miserable weeds. On arrival at the Depot, they were medically examined in a most searching manner, and kept under medical supervision during the whole four months of their training. They are then, if fit, drafted to their battalions, the drill, gymnasium, &c., are

sure to find out any weak spots, and it frequently happens that a considerable number have to be discharged form various complaints, before completing their term of training. I feel convinced that if any of these recruits had suffered from "migraine" it would have been brought to my notice, as it is not quite the sort of companion one would like to go on the Barrack Square with. I think the most probable solution is, that these men were not drawn from a class likely to have a neurotic, hereditary blot of the fine nature of "migraine", although there were quite a number of epileptics, lunatics and men suffering from other nervous disorders. I have never seen any case of this disease among the epileptic insane, though for a long period I had a large number under my charge; I suppose the greater overshadowed the less. I am not aware if the disease exists among the dark-skinned races; I think then we must look to the intellectual portion of the community, with a neurotic hereditary blemish on the family escutcheon to furnish us with subjects. That many well-known people, and those of high mental attainments have been sufferers, is no evidence that migrainous persons have a higher intellectual development than their fellows, although, I think it must be admitted that they are quite up to, if not in many cases somewhat above the average.

Idiopathic Migraine, if such a term may be used, is so far as we know a syndrome, that is a comprehensive symptom group, as to the cause of which, we are in the dark. Some confusion appears to have arisen both among some authors and observers, by not recognising the fact that "Idiopathic Migraine" stands out in bold relief, in contradistinction to the symptomatic hemicrania occasionally met with as a manifestation of hysteria, in cases of general paralysis, of tabes, of focal lesions of the brain, of periodic ophthalmoplegia, and sometimes in other organic lesions of the cerebrum, by its hereditary nature, periodicity, prodromas, and in that, it is neither degenerative, nor destructive, and does not affect the mind, neither has any known lesion been demonstrated.

The fact that I myself have been a sufferer for years, and have had the opportunity of observing several cases in my own family must stand as my excuse for venturing to put forward this thesis as a slight contribution to our knowledge of this disease from a subjective standpoint. The scope of my thesis will be to endeavour to give an outline of the disease from consideration of the literature, and to describe in detail my own experiences, and the measures recommended for giving most relief to sufferers.

ETIOLOGY.

Heredity, if not the absolute, is undoubtedly the predisposing cause of migraine. I think possibly a better way of expressing this would be to say that certain hereditary conditions of some area or areas of the cerebral tissue are the disease, and that various excitements, both peripheral and central are the causes of the manifestation of a train of symptoms which go to make up an attack of migraine.

It seems as if migrainous persons were brought into the world with certain areas of brain-matter, in a state of quiescent instability, ready at any time, like the pool of Siloam, to be troubled. I would even include anaemia, and the nervous temperament amongst the recognised exciting causes, such as anything of a depressing or exhausting nature, both physical and mental, bodily fatigue, late hours, sexual excesses, impure air, improper food, prolonged mental work, mental excitement, grief and anxiety. Other exciting causes may be mentioned, as a bright sunlight falling full on the field of vision, the reflexion of sunlight (not that of an ordinary fire) on some bright object, or from the surface of moving water, and sometimes the dread of an attack appears to favour in some mysterious manner the

development of one. It is common to both sexes, but more frequent in women, probably due to the menstrual periods and other female ailments, acting as additional exciting causes. No age is exempt, and it is with some of us almost from the cradle to the grave. It is certainly more frequently met with in those persons of a higher intellectual development and having a possible neurotic and better class heredity than in those of a lower grade. Ocular defects, as hyper-metropia, and astigmatism, with consequent eye-strain, favour attacks; this, I know from personal experience. The sight was not tested or even enquired into in my school days, some forty-five years ago. In a strength of over 200 boys, only one wore glasses; now it is only too common to see children of all ages and classes wearing spectacles. It is appalling to think how defective the sight, and the teeth too, of the rising generation are.

(2) Dr. W. Harris, mentions a case of migraine commencing at the age of twenty-five, as a result of a painful, spreading corneal-ulcer, which was followed by considerable opacity of the cornea, also a case of trauma of the skull, with fracture of the base, resulting in periodic sick headaches, limited to one half of the head, indistinguishable from true migraine, but without

any visual phenomena (here, I think, if I may venture to say so, is a mistake, as it appears to me that visual phenomena are the very essence and root of true migraine), twelve months later, the patient died, and at the autopsy, a chronic cerebral abscess was found in the frontal lobe, on the same side where he complained of the headache (Practitioner, pages 26 and 27, July 1906). Here is a gross cerebral lesion to account for the headache, which is quite foreign to cases of true migraine. Damp and marshy districts, a residence near a river, that is, in those very localities where rheumatism would be expected to be prevalent, pre-disposed to attacks, while drier districts, and those at a moderately high altitude, seem to lessen the number, and in some cases ward them off for a very considerable period. Trousseau said that migraine and gout are sisters, but I think that gout should rather be put in the position of a parent or grandparent, or even a more distant blood-relative. A point I have noticed myself, though I do not know if any other observers have mentioned it, that in a large number of migrainous persons, the iris is of a light colour.

SYMPTOMS.

This disease appears to me, from my own personal observations to be divisible into three stages.

(i) Incubation.

(ii) Disordered sensation.

(iii) Headache and other phenomena.

(i) The stage of incubation or hatching. When an attack is about to reach maturity or abort and pass away, there is, in some subjects, myself amongst the number, an hour or possibly more before a feeling of buoyancy, good spirits and what has been described as bien-être, others, a patient of mine informs me, that in his father's case, his own, his brother and his brother's son, (three generations), there is a feeling of impending ill, weariness and somnolence the night before, the attack coming on soon after rising in the morning.

(ii) The stage of disordered sensation. The first is disturbance of vision commencing with lateral hemianopia, followed in a short time by some visual aura varying in its nature in different individuals, but once established continuing constant as a rule in subsequent attacks. In my own immediate circle three kinds of aura are noticed:-

(a) A fine vibratory movement of the atmosphere at the outside periphery of the field of vision, exactly like what is observed when looking along the surface of the ground on a hot day, or the appearance of the heated air by the funnel of steam engine.

(b) Peculiar zig-zag lines which have been termed fortification figures.

(c) An appearance as if an illuminated cascade of a very fine film of water were falling in front of the eyes.

Various and more elaborate auras have been described by many writers. (3) Sir W. Gowers quoting Dr. Airey, states in B.M.J. page 1401, June 12th 1909, a case of peculiar complex aura: "This begins as a star a little to one side of the fixing point which enlarges becoming first an angled sphere and then a serrated or zig-zag outline which breaks below; and the elements of which it consists become progressively smaller towards the free extremity," He also says "They are often coloured adjacent ones differing. Sometimes they are luminous without colour. Often they are double. Within the zig-zag as it expands, there is a misty luminosity which becomes fainter internally, and hinders sight if an object is looked at. Thus the dimness of vision with the bright or coloured zig-zag outline resembles the numbness left by the tingling as it passes up the arm.

(I think this rather fanciful and overdrawn.) After its expansion the spectrum often ends by a whirling explosive appearance. In other cases an angled light appears near one lateral edge of the field, or both, sometimes several interlacing zig-zags. Or a stellate bright object may appear on one side and remain without expanding. In other cases a sort of luminous lacework occupies the middle of the field sometimes bounded by a brighter band. These visual phenomena really form the spectral side of the attack, but possibly further investigation and accurate records (a most difficult matter considering the condition of the sufferer.) may prove to be of great scientific value and enable us to elucidate many points which are now obscure. I do not think that these elaborate aura are followed by more severe headaches than those after the more simple and classical phenomena. This stage is, I think, from my own feelings, and from what I have been told by others the psychological period.

It is now that the mental distress is at its greatest, the feeling of shock amounting in some cases almost to horror and terror; afterwards the intense physical pain mitigates to some extent the mental suffering. I have seen a person suddenly stop talking, look pale and terrified, as if something dreadful had

happened at the commencement of the visual prodroma. I have seen this even take place under a false alarm, when the sight had become deranged from looking at the sun, or a bright objett. This early mental perturbation passes away as the aura becomes fully developed, the victim resigning himself to the inevitable. I have met with one case, a lady of considerable mental attainments, and by no means easily upset, who became uncomfortable, anxious and distressed, when the prodromas were talked about in her presence, fearing that an attack might be thus initiated, Then other sensory phenomena manifest themselves, there is tingling, and a feeling of pins and needles in the fingers of one or both hands, which radiating from the starting point, extend upwards, leaving a sensation of numbness in the parts first involved, the lips tingle and feel stiff, as if the skin had been gummed, the tongue also tingles and becomes numbed, and gives a feeling in the mouth as if covered with a thin layer of flannel; then there may occur temporary paralysis of the right arm and leg, followed by aphasia which happened in my own case, but this with me preceded the visual prodroma. There is frequently shivering, feeling of chilliness, and coldness of the extremities; pallor of the face is usual, although flushing is described as occurring in a

certain number of cases.

Gradually all these manifestations pass away, and the third stage commences.

(iii) Stage of headache and other symptoms. The headache commences as a rule on the opposite side to that of the visual prodromas, and is frequently frontal, and I believe almost always is at its commencement. It may continue in this position, or spread to different parts, or even to both sides. The pain is intense and described in various ways by different subjects; with me, it felt as if a sucker were attached to the frontal region, and some force was dragging out the pain, then a feeling as if it were being pushed back into the head. There is generally nausea with or without vomiting; in later life, the vomiting nearly always ceases, although there is still a sensation of nausea. The vomiting may or may not give a small amount of relief. There is general depression, a feeling of utter misery, the patient lies more dead than alive, but keenly aware of his wretchedness.

After some hours the attack subsides, and the sufferer passes into an unrestful sleep, from which he awakes, weary, unrefreshed, and more or less exhausted, as if he had gone through some severe mental ordeal.

various other symptoms have been mentioned by writers on this disease, vertigo, somnolence, unconsciousness, delirium are mentioned by (4) Sir W. Gowers in his "Borderland of Epilepsy" pages 86. 88. 90. 92. He also reports a case of epigastric aura (which appears to me of doubtful origin, as there were no sensory phenomena) which ultimately terminated in a true epileptic fit. I myself have observed cases of vertigo, and stupor or unconsciousness; the interval between the attacks may be long or short, the attacks may vary in intensity and duration, sometimes only the visual phenomena with no headache, or only very slight discomfort, hardly amounting to actual pain, other times, a well-marked and fully-developed one may occur.

DIAGNOSIS.

Defining migraine is a disease of unknown pathology, manifested by periodic headaches, and attended by a sequential train of visual, motor, gastric and mental symptoms.

The consideration of the periodicity of the headache, the prodromas, and particularly their order of occurrence forms the basis on which a correct diagnosis is to be constructed. The headache, the chief symptom which is generally brought to the notice of the physician, and for which he is consulted, is distinguished from the various other headaches by its history, periodicity and the phenomena, which ushers in, and accompany an attack. On enquiring into the history of the attack, we are probably told that it began about the age of puberty, and that other members of the family are sufferers, and that it has occurred in one of the parents, grandparents, and even more distant blood-relations.

The headache is stated to appear periodically, at longer or shorter intervals, it may be every week or month, or even oftener, or a year or more may elapse without an attack. This periodicity is a great aid to diagnosis, but far more so, and what practically makes us quite certain of the nature of the headache we are

dealing with, are the prodromas, and the sequence of their progression.

These may be tabulated as follows:-

(i) Sensory and mental.

(ii) Motor.

(iii) Visceral.

(iv) Headache and mental.

(i) Sensory and mental. (a) Visual phenomena consisting of various forms of spectra, &c., more or less complex in their construction, often associated with a feeling of fright or even terror, herald in the attack. (b) Tingling more or less severe, pins and needles in one or both hands, extending up the arms, and leaving a sensation or numbness in the part first involved, same sensation in the lips, with stiffness, and in the tongue; there is also in some cases aphasia.

(ii) Motor. Transitory paralyses of the right arm and leg, or arm only.

(iii) Visceral. Nausea and vomiting. Though probably often central, in many cases appears to be visceral in its origin, sometimes diarrhoea.

(iv) Headache and Mental. Headache of an intense and peculiar character, confined as a rule to one side and frequently frontal, but the site and extent may

vary. In addition to this, great mental distress, and bodily depression, the sufferer passing from health to a condition of utter incapacity, and apparent serious illness in a short period. This headache must be distinguished from the symptomatic hemicrania met with sometimes as a manifestation of hysteria. [5] Dr. C.K. Mills (Philadelphi) in Starr's Diseases of Children, vol II, page 720, states "that there is a form of initiative or hysterical headache in children that may closely simulate migraine, particularly in those whose parents are victims of the disease, or in cases of general paralysis, of tabes, of periodic ophthalmoplegia, and in other organic diseases of the brain. Here the heredity, periodicity, sequential prodroma that the disease is not lesional, and is neither degenerative nor destructive in its nature, will confirm the diagnosis. In organic mischief, such as tumour and meningitis, &c., the ophthalmoscope and various localising symptoms will help.

The form of periodic ophthalmoplegia already referred to and termed by [6] Dr. W. Harris in the July number of the "Practitioner," 1906, page 34, Ophthalmoplegic migraine is in my opinion quite a misnomer, and likely to lead to confusion, the third nerve here being implicated, causing nearly complete ptosis with divergent

strabismus, and a fixed and partly dilated pupil. These symptoms are not accompanied by visual phenomena, as in the headache of true migraine. In some cases, partial damage to the third nerve can be shewn to be the cause of the paralysis, such as meningeal thickening, pressure of exostosis, &c. He also states that he has seen a case initiated by salts thrown in the eye, commencing two days after the accident, and another case where enucleation of the eyeball was performed for the relief of intense pain in the organ with success, such lesions, trauma are never the cause of, nor such treatment ever entertained in the disease now under discussion. Another point in diagnosis, and one of the gravest importance, considering how much misery or relief may depend on the physician's verdict, is the differentiation of attacks of migraine and those of that awful affliction, epilepsy. That migraine has been mistaken for epilepsy, there appears no doubt, and cases are reported where the two diseases are stated to alternate in the same subject. A sort of Box and Cox occupying the same cephalic apartments at different times, but their individuality always remaining distinct to the skilled physician. (7) Sir William Gowers reports in his "Borderland of Epilepsy, pages 76-77, a case of a woman aged thirty-two years, who was stated

to be migrainous at the age of eight (the description of the attacks is not in any way typical) became epileptic at thirty, the headaches ceasing entirely when the fits began; under treatment, she had only one attack, but the headaches returned with increased severity after the fits were arrested (here again the description is not typical, either in time of occurrence, or character of the visual phenomena) also a case of a member of our own profession with a history of gout and migraine, but not epilepsy or insanity, who is stated to have had distinct migraine at fifteen, with visual spectra. At the age of seven, he had brief attacks of micropsy without headache, (This is an epileptic aura) When twenty, he had distinct epileptic convulsions, headaches ceasing; these again returned on cessation of the fits without visual sensations, then again, slight minor attacks consisting of a brief inability to speak, then they both ceased." It appears there was a struggle between the two for the ascendancy, each alternately gaining the advantage, then ending ultimately in the annihilation of both; a most satisfactory conclusion!

The Aura (or premonitory symptoms) are deliberate in migraine, each unit falling in methodically and in its proper order. With those of epilepsy, abrupt and

tragic in their onset; all those who have had to deal with epileptics know the hurly-burly of the attack, how one thing falls rapidly on the other. Again, they are more elaborate than those of migraine, faces and figures being seen, and views of places being observed by the patient, this is never so in true migraine. It is not supposed for a moment that there could possibly be any difficulty in distinguishing between migraine, and a well-marked epileptic attack, but only in those of an evanescent and slight nature. The sensation passing up the arm resembles the aura of epilepsy, but in migraine it is slow, taking minutes, while in epilepsy, it only takes seconds. (8) Sir William Gowers in "Borderland of Epilepsy," page 81 reports the case of a boy aged thirteen, of an intensely gouty family, who had periodical, vertical headaches, but on their becoming limited to the left side, each attack was preceded by a sensation in the right arm, characteristic tingling, beginning in the hand, passing up the arm, leaving numbness behind; there was distinct aphasic difficulty in speaking; as it ceased, the left sided headache began, lasting some hours. These symptoms were typical of migraine, yet an experienced physician considered it "Jacksonian Epilepsy," probably due to a tumour of the brain, and advised operation. The subsequent course

of the case, confirmed the diagnosis of migraine. There is headache in both migraine and epilepsy, but that of migraine is infinitely more severe than that following those slight attacks of epilepsy, which might be mistaken for it.

PROGNOSIS.

The prognosis of migraine as to cure is bad, but under appropriate treatment, lives that would be almost unendurable, are rendered comparatively comfortable, and in many cases, the attacks can be reduced almost to a minumin, so that they may be absent for months, and in some cases even for years.

PATHOLOGY.

The pathology of this disease is practically unknown, pathology is not explained by enumerating the excitants of an attack such as eye-strain, gastric disturbance, indiscretions of various kinds and hosts of other things. [9] Dr. E. Liveing in his work says that the phenomena are those of a nerve-storm, traversing more or less the sensory tract from the optic thalami to the ganglia of the vagus, or else radiating in the same tract from a focus in the neighbourhood of the quadrigeminal bodies. Some pathologists hold that it is a form of neuralgia, [10] Dr. W. Harris ("Practitioner" pages 29 and 30, July 1906) mentions that it has close relationship to other paroxysmal neuroses, especially epilepsy asthma and vaso-motor angina; that a typical migraine with hemianopia and the scintillating scotoma, may certainly be looked upon as a sensory epilepsy, with a discharging focus in the neighbourhood of the occipital lobe. Others state that there are two kinds of hemicrania, one where the blood vessels of a limited portion of the brain are in a spastic state, and in the other in a paretic condition. [11] Sir W. Gowers says in the British Medical Journal, page 1403, June 12th 1909, "if

we assume that vasomotor spasm is the cause of the prodromas, we may regard arterial spasm in the motor region as a sufficient cause of the loss of power. To me, the vasomotor theory, while presenting many difficulties is quite as feasible, if not more so, than others that have been advanced.

I have seen, in migrainous subjects, urticaria and local cutaneous hyperaemias (not that I would suggest that the cause of the prodromas could be a localised urticaria of the brain tissue) also local and general perspirations, pointing to a certain unstable state of the vaso-motor centre.

PERSONAL OBSERVATIONS.

I come of a somewhat neurotic stock and distinctly migrainous on the maternal side, and if I may so describe it, spent my early life in a migrainous atmosphere. I can find no record of this disease in my father's family. He, himself, never suffered from headache, but was a profound dyspeptic, and though a man of very considerable ability, having been a scholar of his College, and having taken mathematical honours at Cambridge, he was of an extremely retiring, and almost painfully sensitive disposition; he died suddenly at the age of 58, (being found dead in his bed); his sister, his only relative, was just the reverse in temperament, she, though troubled with rheumatism and cardiac mischief, lived to an advanced age; she too succumbed suddenly, being found dead in her head. The family history sheet appears clean as far as any acquired disease, alcoholism, &c., nor is there any trace of epilepsy or insanity on either side. My paternal grandfather was paralysed sometime prior to his death. The paternal grandmother and maternal grandfather died at a comparatively early age of some ordinary disease. My maternal grandmother, so far as I can gather, must be held responsible for transmitting this disease to her

children, particularly to my mother and my uncle.

My grandmother is stated to have suffered all her life from what was then termed "bilious headache." My uncle was a marked sufferer all his life! He married, but fortunately had no offspring, the transmission thus ceasing. About eight years before his death, he had an attack of glaucoma-fulminans of the right eye, with consequent loss of sight. This does not appear to have in any way influenced his attacks of migraine. His death was somewhat sudden, he complained of one of his usual attacks, retired to bed and died in a few fours at the age of seventy-nine, cause of death being certified as cerebral apoplexy. The only points of interest are, a life-long sufferer from migraine, having ocular trouble late in life, the closing scene being heralded in by the prodromas of the disease he had suffered from for so long. Apart from the misery caused by the periodic attacks, he did not seem handicapped in life's race. He too, was a man of very considerable intellectual attainments, having taken mathematical honours at Cambridge, and being a scholar of his College. For years, he was Vicar of a large East End of London Parish, and did good work, but there was always an indefinable something, which I have seen in many migrainous persons, which may be best expressed

that life is with them nearly always "piano", and only occasionally "forte," between the attacks. My earliest recollection of my mother's attacks dates from fifty years ago. We were then living in Wiltshire by the river Avon, in by no means, healthy surroundings. I remember distinctly how a shadow used to periodically fall on the noise and gaiety of the nursery, when we were told that our mother had one of her headaches; it being even then recognised that there was a distinct personality in it, and peculiar to herself. Many a time when I was somewhat older, have I sat by her side in a darkened room and witnessed the distress and agony of these attacks, in blissful ignorance that my turn was to come later on. The treatment of that day did not extend beyond what may be summed up as Brandy, Basin, Bed and Bearing it. She informed me that the headaches began at the close of girlhood. She describes distinctly the prodromas, hemianopia and the visual phenomena similar to those I shall describe in reporting my own case. She had feeling of pins and needles, and numbness of hand and arm, lips and tongue, shivering nausea, vomiting, and intense frontal headache. The vomiting, though fairly constant in early life, was never very severe, never gave relief to the headache, but to some extent the nausea, which was almost invariably

present. The vomiting disappeared entirely in later life. She is now more than eighty years old, though time has lengthened the intervals, lessened the pain, and alleviated the mental distress, she still has occasionally the ocular phenomena ushering in a mild attack, shewing the cerebral volcano has still some activity remaining.

About two years ago, a somewhat unusual attack occurred, which caused considerable alarm to her daughters, on account of her advanced age. I was at once telegraphed for. There appears to have been the usual ocular phenomena, some vertigo, slight aphasia and headache. On seeing her, I came to the conclusion it was an attack of migraine following a somewhat different course from the usual. She soon regained her normal state. I may mention here that deafness, (otosclerosis) has appeared in three generations. Unlike my uncle, my mother has had a family of fourteen (the writer being the second child) four boys and ten girls; a boy and girl died in infancy, two girls at the ages of seventeen and eighteen, not migrainous, one girl and twenty-six, migrainous, and a great sufferer from urticaria. Of the nine now living, myself, my youngest brother and three sisters are migrainous, making six out of ten who lived until over twenty-five years of age,

subjects ofmigraine. In the family there were two sets of twins, (girls). The elder, both were migrainous, the younger, one very deaf, the other migrainous late in life, about forty. Each of these cases presents some feature peculiar to itself. All of us initiate our attacks with hemianopia, one sister has an aura of fortification figures or zig-zag lines, another sister describes her aura as if an illuminating cascade of a very fine film of water was falling in front of the field of vision. She has some vertigo, and in her earlier life used to pass into a state of semi-unconsciousness, from which she could be roused with some difficulty. The headaches in her case were very intense. Myself and the others have the same aura. My youngest sister, who had her first attack at the beginning of this year came to me in a state of very considerable mental distress, saying that she had only been able to see half things, and that there was a peculiar vibratory condition of the air, appearing at the upper and outer periphery of the field of vision; this lasted some little time, but was not followed by headache. The chief features of this case were, initial attack when over forty, and a mental condition, amounting almost to terror. My brother developed his attacks in early childhood, and still continues to have them

periodically. It was noticed when quite a child, that when playing, he would suddenly stop, and appear confused, after which, he had headaches of a somewhat severe nature; he had too, frequent screaming fits, these left him as he grew older. When about sixteen, he had, what was termed by his friends, fainting attacks, of course, the fear then was that they might prove to be epileptic, but this was found by careful observation not to be so. Once, when examining his heart, directly I placed my stethoscope in position, he fell down, and was insensible for about a minute. I have seen him in several attacks since, but could detect nothing epileptiform in their character. My own migrainous career commenced at the age of thirteen, in the year 1866, and continued until the year 1881, a period of fifteen years, when it came to a curious and abrupt termination. My first attack started one morning! I mention the morning, as all my subsequent headaches, I think, without exception, were matutinal. On a bright sunny day, when I was playing in the garden, the fact that I was playing in the open air shows that there was probably no eye-strain to account for the ocular phenomena, I will now describe. I was astonished to find that suddenly my sight had become in some way obscured; I rubbed my eyes to clear them, but without

success, when I noticed on the outside of the field of vision of the right eye, a fine tremulous, vibratory condition of the air, as it appeared to me, like the movements seen on a hot day when looking along the surface of the ground, or the movement of the hot air at the side of the funnel of a steam-engine. The first dimness of sight was undoubtedly due to hemianopia, of course not then recognised, and the subsequent phenomena were the aura. No change ever took place in the character of this, during the whole time I suffered; returning home, I told my mother about my sight, and she at once recognised that it was the same ocular peculiarity she suffered from, prior to the commencement of her headaches. This time, there was no headache, or any other symptom. It was some months before I had any other attack, but in a short time they became periodic in their nature.

The attacks began with hemianopia followed in a short interval by the peculiar visual phenomenon I have described, then tingling, (pins and needles) in the right hand and forearm, with subsequent numbness, tingling in the lips, which felt stiff, as if they had been covered with gum, tingling and a numbed feeling in the tongue, which felt as if covered with a thin layer of

flannel; shivering and coldness of the extremities, there was at the same time great mental depression, and a feeling of nausea followed sometimes by actual vomiting, the headache which was frontal and on the left commenced as the visual phenomenon faded away. It was very intense, and felt as if the pain were one moment pulled out of the head by a sucker, and then pushed back again. I was absolutely incapacitated, and had to go to bed in a darkened room for the rest of the day, where I would lie mentally alive to utter misery. I think the nearest approach to the headache is that of influenzal origin, and the depression and misery, I think, are in some way comparable to that suffered in mal-de-mer. I would mention here that at the very commencement of the attack, there was always a feeling of shock or horror in my case, and others have told me that they have suffered in the same way. During this period, I was living close to a stream, and as in Wiltshire, in not too healthy surroundings. At the age of fifteen, I went to school in Essex, and during the whole of the four years I spent there, I suffered from attacks. I remember no other boy being similarly affected, although there were over two hundred scholars; here again, the nature of the county, which is damp and marshy appears to be favourable to the development of attacks. Little

notice was taken of my attacks, excepting that a purgative was administered, and I was confined to the sick ward for a day or two. The idea that eye-strain might have had some share in starting the attack was never even thought of, the mischief being considered gastric or hepatic or both at the pleasure of the Medical Attendant. Every migrainous person soon begins to understand his personal equation, as regards his attacks.

If the day were warm, cloudy and damp, I had no fear, but a bright sunny day with an East wind, I was anxious until afternoon, a feeling of bien-être, or general buoyancy of spirits made me beware, though many subjects have told me that this is quite the reverse in their case. The reflection of sunlight playing on moving water, a flash of sunlight from a mirror or glass, or any bright object, if it caught me full in the field of vision, were sufficient to start an attack with the usual prodromas, but of a ~~similar~~ slighter nature. I discovered that if in the very early stage of hemianopia I could eat some food, the attack was occasionally aborted; this, I have been told by one of my sisters, happens in her case. The dread of having a strong reflected light shining on my eyes, caused me on my bright days to walk with my eyes fixed on the ground. On one occasion, by

a very powerful effort of the will, I was able to abort an attack, but was much exhausted afterwards. I had too by the same means, the power of causing the palms of my hands to perspire profusely, but this I am now unable to do. I have found some migrainous people, myself amongst the number, very liable to small cutaneous hyperaemias and urticaria. I myself am unable to take any uncooked fruit of the berry class, the ordinary blackberry acting like a poison, causing cold clammy perspirations and depression, passing almost into a state of collapse. All kinds of so-called shell-fish rapidly produce an attack of well-marked urticaria. Other members of my family who are migrainous also suffer from urticaria, but not traceable to any particular kind of diet. In contra-distinction to the possibility of troubled areas of the cerebral tissue causing the phenomena of migraine, a peculiar freezing of some area appear to take place with me, in this way, when being suddenly asked in class to repeat something which had been just said or explained, I found it impossible to do so, although I did my very best. One master in particular took a fiendish delight in suddenly asking me to repeat what he had just said, knowing well what the result would be; this was put down to inattention, and followed by punishment. In one half

year's report, it was specially mentioned as very reprehensible, evidently most unjust, as I was in no way responsible for the occurrence. I think this rather tends to indicate that certain areas of the brain in migrainous subjects are just on the verge of abnormal excitability, or abnormal inactivity amounting to temporary functional paralysis in the latter under some form of stimuli. I suppose the peculiarity I have described in myself, as a sufferer from migraine, is in some way analogous to the so-called stage of speech-fright in other persons. About two years after I left school, which I did at the age of nineteen, I went to Edinburgh to study medicine, during the whole of my curriculum, I suffered more or less from migrainous attacks; so frequent were they at times, that I got considerably chaffed by my fellow-students for having such an effeminate disease as megrims. There is no doubt this complaint does handicap to a certain extent a man in his professional studies. I remember having a bad attack just before a professional viva-voce examination, but the examiner, who saw how really ill I was, most kindly did his best to put me at my ease, and I was able to acquit myself quite satisfactorily. If he had been a different kind of man, and upset me by his manner, I have no doubt I should have been completely confused, and probably failed, though it was a subject

I was well up in. The only time I was really free from attacks during my University Career, was for five months when I was assisting a medical man in the town of Forfar. On my return to Edinburgh they commenced again, and during my last year of study, were more severe than ever. I was then living in a somewhat damp locality. After graduating in 1880, I was appointed Assistant Medical Officer to the Gloucester County Asylum. The part of the building allotted to the Medical Officers was old, and in a very insanitary state, and it was found that there were tons of sewerage, saturated soil under the foundations, when after a severe outbreak of typhoid, the system of drainage was investigated. I suffered very severely here, due partly I think to the insanitary state of my quarters, partly to the proximity of the river Severn, and the low-lying districts on its banks. At the end of the year 1881, my migrainous career came to an abrupt termination. One evening, before turning in for the night, having a cold, I blew my nose several times somewhat violently, to get rid of some obstruction in one nostril which was annoying me. This I mention, because it may or may not have something to do with what followed.

On awakening the next morning, I was astonished to find that I had lost all power in my right arm and leg,

which were numbed and paralysed. With great difficulty, I managed to get out of bed and ring the bell for assistance. My servant came and found me on the floor in a helpless condition. I told him what had happened, requested him to put me back in bed, and to fetch my colleague. At this time, and during what took place subsequently, my intellect was perfectly clear. My two Medical Colleagues soon arrived, and after examining me, they came to the conclusion that my condition was serious, and that it would be better to let my friends know, particularly as in a short time I became aphasic (there was no difficulty in the mechanical act of articulation, I rather think my condition would be better described as one of amnesia or a combination of aphasia and amnesia. I was lying on my back thinking what an unfortunate termination to my professional career it would be, if I should be permanently incapacitated, when suddenly hemianopia began, and the well-known visual aura. In a few moments my speech returned, paralysis passed off, and I was able to explain to my anxious colleagues that it was evidently one of my migrainous attacks, commencing in an unusual manner. This part of my illness lasted about an hour or a little less; then followed one of the most severe headaches I ever experienced, lasting all

day. It was my migrainous "armageddon." Towards evening, the pain gradually died away, and the curtain was rung down, on a day of torture and misery, and too on my migranous history. May it never again be raised! From that day to this, a period of twenty-nine years, I am devoutly thankful to say, there has been no return of this disease. I was able to leave my bed the same evening, but was much shaken and exhausted, and had to have an entire rest and change for a week. There appeared to be a sensation of weakness in the hand only for a short time, but this I think was due more to anxiety than anything else. As time went on, the feeling of emancipation from migraine was one of most intense relief, known only to a sufferer, but for a long period this was tempered with a fear of recurrence of the disease, or possibly that attacks of epilepsy might manifest themselves in its place. Did this attack arise independently, or was it the result of the violent nose-blowing of the night previous? It appears to me quite possible, in fact, almost probable, that this violent mechanical action, in some way affected the vaso-motor centre, and the cerebral circulation locally, causing spasm of the vessels supplying motor centre for the right arm and leg, resulting in their temporary paralysis, and then passing on to the higher centres, producing aphasia,

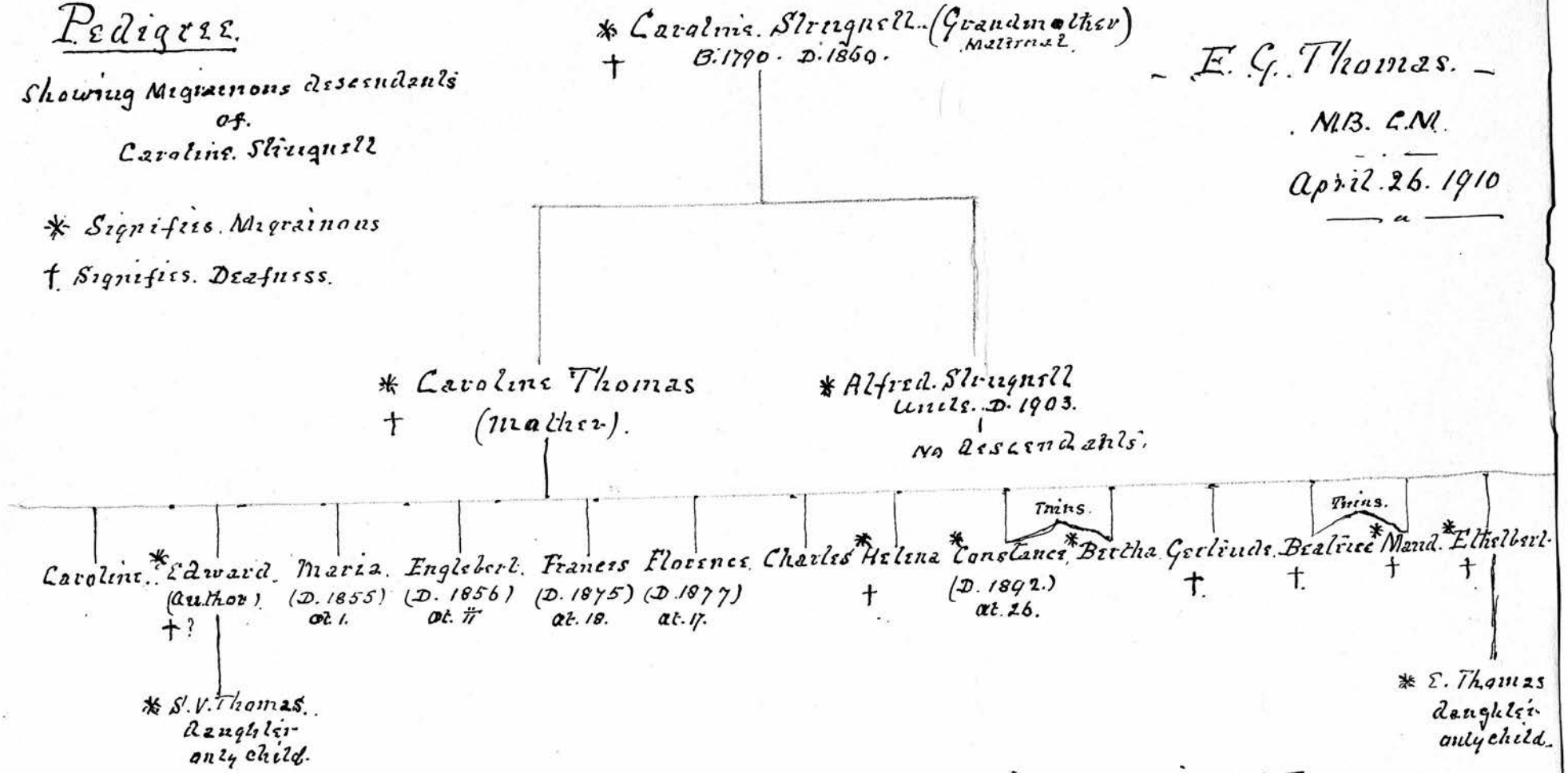
then the visual phenomena which occurred. Whether this violent mechanical action caused some other mysterious change in the cerebral areas involved in the production of migraine, or not, I am unable to hazard an opinion, but the fact remains, here and then, they abruptly ceased.

Pedigree.

Showing Migrainous descendants of Caroline Sturgnell

* Signifies Migrainous

† Signifies Deafness.



E. G. Thomas.
M.B. C.M.
April. 26. 1910
— a —

Caroline Thomas. Mother is over 80 years of age and still has slight attacks.

S. V. Thomas daughter of Edward the writer of this Thesis is aged 13 years. and has had ocular phenomena on several occasions and several bad headaches.

E. Thomas daughter of Ethelbert. this youngest child of Caroline Thomas has screaming attacks like her father had as a child. and has also bad headaches. This child is aged 9 years.

E. G. T.

In concluding my remarks, I would again draw attention to the following points.

Firstly. How distinct and persistent the heredity of Migraine is in my family. My grandmother born in 1790 a sufferer, my Mother over 80 still having attacks, of nine of her family now living five are migrainous, the disease is appearing in the fourth generation, thus showing unbroken line extending over a period of a hundred and twenty years. (See)pedigree table.)

Secondly. The attacks themselves. That they commenced in early childhood in my brother, in one sister delayed until the age of 40 that they were associated in my brother with fainting attacks, in one sister with Vertigo and unconsciousness, and in myself they abruptly ceased at the age of twenty-eight ( ) after a well marked migrainous career of fifteen years duration.

Thirdly. There never has been either Epilepsy or Insanity in any member of the family.

It is only because I myself have been a sufferer, and have been ultimately connected with Migraine all my life that I have ventured to put my observations in the form of a Thesis. Though I cannot hope to have thrown any new light on this very difficult subject yet. I trust that a detailed record of personal observations may be in some way useful, and may add a little to the knowledge already acquired of the subject.

T R E A T M E N T.

Migraine seems to me to be in that class of cases whose cure Oliver Wendell Holmes said should have been begun two hundred years ago, so if future generations are to be freed from this scourge, measures must be taken to endeavour to eradicate it in their progenitors. If little has been accomplished by our profession in the region of pathology, except the propounding of various theories, much has been done in the domain of treatment, to ward off, abort and lessen the number of attacks, and to mitigate the physical and mental suffering, when they have developed, which after all is of the first importance to the patient. When looking back many years, as an old Migrainous subject, one cannot feel anything but distressed at the amount of suffering, at times reaching agony that was endured before the profession began to realise what an extraordinary disease so-called sick headache was. In my early time, there was neither literature, nor knowledge, and as to treatment, a purge and rest were all that was considered necessary. Being a disease that frequently manifests itself in early childhood, and in most cases before or at puberty too much importance cannot be attached to the careful supervision and observation of children especially those of Migrainous parents. It is now that much may be done

by attention to any ocular trouble, brain-fag from over-study, and anything that tends to lower the state of health. By this method also, we shall be able to delay the development of attacks, and to recognise them at once when they appear. Another point, I would emphasize is the great relief obtained by sufferers who have been living in low and damp districts by taking up their residence in dry localities, and at a moderately high altitude. I have noticed repeatedly that persons who have had frequent attacks, when coming to this neighbourhood, which is seven-hundred feet above the sea level, and has no river near, situated on the Surrey hills, with a soil of gravel and chalk, have found the intervals between them greatly lengthened, and the attacks themselves of a milder nature. Two girls, who resided for some time in my house, and were both pronouncedly migrainous, experienced great relief from their stay in this place.

Treatment comes under three heads during the intervals, during the premonitory stage, and during the headache stage.

1. During the intervals. The avoidance of all things that lower the tone of the bodily health, and particularly those things that the patient knows are likely to develop an attack. Exercise in the fresh air short of fatigue, should be taken, sleeping in a well-ventilated room, frequent tepid bathing, maintenance of

all the functions in their proper condition. The eyes should be carefully examined for any errors of refraction &c. Medicinally various tonics, and those best suited to the constitution of the patient. (12). Gowers in his "Borderland of Epilepsy" page 104, recommends trinitrine given regularly in a dose of $\frac{1}{150}$ – $\frac{1}{80}$ gr. twice or three times daily. He prefers a fresh solution of the Liq trinitrine, combined with strychnine and gelsemium; failing these, bromides combined with small doses of Indian hemp or phenazone may be tried. I have never personally tried nitro-glycerine (I remember it being used by the late Professor Sanders, when I was Clinical clerk in 1879 but it was not for Migraine) What I found efficacious was strychnine, bromides and purgative doses of soda barbarabae. In my early University days, it was the time of Cholagogues, and I was treated with these by the Clinical tutor without much success.

(13). Mr. Bertram Thornton, in "St. Mary's Hospital Gazette," June 1910 page 2, states that he has treated cases of Migraine with vaso-constrictors (digitalis and ergot pil) with success.

II. During the premonitory stage. Immediate rest, keep warm, a tea-spoonful of sal-volatile in water may be taken, or a stimulant, if in the habit of taking it, otherwise it is best not to order it. A full dose of phenacetin and caffeine or some of the other coal-tar series, inhalation of nitrite of amyl, the brother of

a patient of mine always carries Capsules, and finds that they give him relief. In some cases, if food be taken immediately, it will ward off an attack. Bromides and nitro-glycerine may also be tried.

III. During the Headache stage. Rest in bed in a darkened room, but this the patient will naturally seek; hot water bottles to the extremities and warm clothing over the body, so as to favour the determination of blood to the surface. If not already given, a full dose of phenacetin and caffeine, 30 grs or Migrainine (a simple mixture of these drugs, in proportion of 1 - 5), a preparation called Höchst from a German Chemist of that name, composed of the same ingredients by heating them together at a certain temperature, is said by (14) Gowers (in his "Borderland of Epilepsy", page 103) to be more efficacious than the simple mixture. This may be given in doses of 15 grs. Nitrite of Amyl may be inhaled or nitro-glycerine given, hyoscine may be tried in combination with bromides. I myself obtained most relief from bromides and Indian hemp, the bromide in very large and the Indian hemp in full doses, ice or evaporating lotions to the head, hot baths with ice to the head may to some extent mitigate the pain, Massage to the head and forehead, combined with the administration of high-frequency electricity to the scalp in the form of faint-sparks is recommended

by (15) W. Hais, (Practitioner, page 33, July 1906) Gowers says that an injection of Morphia is only admissible in attacks of extreme severity, in which the cerebral disturbance amounts to delirium. In all cases we must choose our remedies according to the predominance of vaso-constriction or dilatation of the vessels.

B I B L I O G R A P H Y.

(1) Dr. W.H. Hains, Practitioner, page 29, July 1906.

(2) Dr. W.H. Hains, Practitioner, pages 26 and 27, July 1906.

(3) Sir William Gowers, "B.M.J." 1401, June 12th. 1909.

(4) Sir W. Gowers, "Borderland of Epilepsy", pages 86, 88, 90 and 92.

(5) Dr. C.H. Mills, (Philadelphia) Starr's "Diseases of Children", vol. II. page 720.

(6) Dr. W.H. Hains, "Practitioner" page 34, July 1906.

(7) Sir W. Gowers, "Borderland of Epilepsy," pages 76 - 77.

(8) Sir W. Gowers, "Borderland of Epilepsy", page 81.

(9) Dr. E. Liveing, "Quain's Dictionary of Medicine", volume II, page 31.

(10) Dr. W.H. Hains, "Practitioner" 29 and 30, July 1906.

(11) Sir W. Gowers, "B.M.J." page 1403 June 12th. 1909.

(12) Sir W. Gowers, "Borderland of Epilepsy" page 104.

(13) Mr. Bertram Thornton, "St. Mary's Hospital Gazette, page 2, Jan: 1910.

(14) Sir. W. Gowers, "Borderland of Epilepsy" page 103.

(15) Dr. W.H. Hatris, "Practitioner", page 33, July 1906.